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FEDERAL SECURITY AGENCY

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PUBLIC HEALTH SERVICE

Leonard A. Scheele, Surgeon General

Division of Public Health Methods

G. St. J. Perrott, Chief of Division

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Public Health Reports

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Public Health Nursing: 1951

Summary of the Conference of State Directors of Public Health Nursing

By PEARL McIVER and RUTH G. TAYLOR*

The 1951 Conference of State Directors of Public Health Nursing, held March 12-19 in Washington, centered on the national defense emergency and the special problems arising from expanding civil defense activities.

The urgent demands of civil defense are, of course, felt by the State Directors of Public Health Nursing since virtually every public health program involves public health nursing.

Long before the Conference opened, State directors listed topics they wanted to discuss through their steering committee: Amy L. Fisher, North Carolina; Portia Irick, New Mexico; Helen Kinney, Missouri; and Mary E. Parker, New York. Committees of the Division of Health Services of the Children's Bureau and the Division of Public Health Nursing of the Public Health Service, Federal Security Agency, built the Conference program accordingly.

Leading authorities in a number of fields set the stage for the Conference with their talks at the general session. Delegates got down to cases at the follow-up work group sessions.

Authoritative Speakers

To give the directors a panoramic view at the opening program, Frieda S. Miller spoke on *The Availability and Use of Womanpower in the Emergency*. Miss Miller is Director of the Women's Bureau, United States Department of Labor. She emphasized that:

- While the role women play in the economy of the United States has grown to an ever-increasing extent, their contribution will be even more vital in the present emergency.

*Chief, Division of Public Health Nursing, Public Health Service, and Chief, Nursing Section, Children's Bureau, Federal Security Agency.

- Long-term trends as well as emergency needs should be considered in the planning of programs for women workers.

- Almost 33 percent of the women in the population are working women.

- The 38 million women not working now form the largest reserve from which additional workers could be drawn. But not all of these women would be available for employment.

- One of the most striking developments in recent years has been the increase in the number of married women workers. At present married women form almost 51 percent of all working women. Ten years ago married women accounted for but 36 percent.

Demand for Nurses

The other half of the opening session was on Use of Nurse Power—Ruth B. Freeman's subject. Miss Freeman is Nursing Consultant with the National Security Resources Board and Associate Professor of Public Health Administration and head of the school of hygiene at Johns Hopkins University. She brought home such points as:

- The United States will need almost 100,000 more nurses by 1960 to meet the growing demands for professional nurses in public health, hospitals, industry, and physicians' offices and to take care of the expanding population.

- One out of every 10 girls graduating from high school must be recruited as a nurse if the Nation's needs are to be met.

- The use of nurse power is a continuing rather than an emergency problem, and it is not realistic to count on the 205,000 inactive nurses to fill unmet needs. Of the total now inactive, 87 percent are married; 57 percent have children under 18; 10.6 percent are over 50 years old.

- Every fact and factor in today's situation shows us undeniably that maximum use of nurse power is of tremendous importance to the Nation, to every organization or agency employing nurses, and to the individual nurse herself.

- We must husband nursing skills, not only to safeguard the public but also to maintain the great public confidence in the nursing profession.

Continuing Progress

One Conference session was devoted to Improvement of Nursing Service with Marian Sheahan the principal speaker. Miss Sheahan, Director of Programs for the National Committee for the Improvement of Nursing Service, emphasized that:

- The two main factors in improved nursing service are: (1) better qualified nurses; (2) better use of nursing skills.

- Better qualified nurses mean improved schools of nursing, and better schools can only be had through better prepared faculties and

through regional planning to get maximum use of available clinical facilities.

- The need for financial aid to schools of nursing is urgent.
- Improved administrative methods, in-service training programs, and better personnel policies are ways to improve the use of nurse power. Several plans are being developed jointly with allied professional organizations, such as the American Hospital Association, for achieving these goals.

Anna Fillmore, General Director, National Organization for Public Health Nursing, pointed out specifically how the NOPHN is working to improve public health nursing service. Lucile Petry, Chief Nurse Officer, Public Health Service, discussed the subject from the point of view of regional planning for educational purposes.

Building Examinations

Lillian D. Long and Dorothy Deming talked to the directors about the work in objective tests being done by the American Public Health Association's merit system service. Dr. Long is Associate Director of the service and Miss Deming is their Public Health Nursing Consultant. In their discussion of Techniques in the Selection of Personnel they noted that:

- In public health nursing alone 64 different tests are available, ranging from graduate nurse to State director of public health nursing. The merit system service can draw from a stock of 4,000 questions when preparing nurses' examinations, which cover the fields of basic, surgical, public health, orthopedic nursing; materia medica; communicable and noncommunicable diseases; maternal and infant care; child, mental, and oral health; nutrition; health education; and records and reports.

- Around 2,000 applicants for nurse positions in State health departments have taken these tests during the last 3 years.

Nursing in Medical Care Plans

Nursing service is an essential part of medical care and should be included in medical insurance plans, Alma Haupt told State directors. Miss Haupt is Director of the Metropolitan Life Insurance Co.'s Nursing Bureau and chairman of a joint committee on nursing in medical care plans of the American Nurses Association and National Organization for Public Health Nursing.

Dr. C. L. Williams, Chief of the Bureau of State Services, Public Health Service, observed that while the actual number of professional health people is greater today than ever before, the numerical gains are more than offset by increased demands for health workers and stronger competition for their services. He added that States which have not brought their salary scales up to the general standards of the country will find themselves in a shortage situation.

Recalls White House Conference

At the follow-up session on the Mid-Century White House Conference on Children and Youth (held last December in Washington) officials of the Children's Bureau reported on some of the maternal and child health problems that face the country today.

Dr. Edwin F. Daily, Director of the Division of Health Services, pointed to the need for reexamination of time devoted to routine medical and dental inspections in the Nation's schools. Preliminary screening of children by teachers, nurses, or technicians to find those with disabilities would give the doctors more time to care for children in greatest need.

Commenting on the shift in the general thinking on crippled children's programs, Dr. Daily said that at first State programs concentrated on children with orthopedic defects. Now they are putting more emphasis on such child handicaps as rheumatic fever, epilepsy, and hearing conditions. He pointed out that:

- It is time to reconsider the extent to which hospital maternity nurses could assume more responsibility for patients during labor, delivery, and in postpartum care in view of the possibility of a shorter supply of medical manpower due to the emergency.

- A shortage of hospital beds and the high cost of hospital care are two factors in the incredibly short periods of hospitalization of some maternity cases. One study showed that average cost of hospital care has climbed to between \$15 and \$20 a day.

- The importance of the prenatal diet of mothers as a factor in the health and survival of infants at birth and during the first year of life points up the need for more attention to nutritional aspects of pregnancy.

Need for Serenity

Katharine F. Lenroot, Chief of the Children's Bureau, called on nurses to be the "community's eyes and ears" in recognizing problems during the emergency.

Noting that the Bureau is getting questions now about the emotional effect on children of drills for protection in case of an atomic bomb attack, she said that children whose parents are serene and able to face life with courage have an underlying security that they can achieve in practically no other way. Parents whose guidance in regard to safety, whether from burglars, fire, drowning, or disease, has been calm, rather than frantic and fear producing, will probably find no great harm resulting to their children from the education schools are giving on A-bomb protection. Such education can become as routinely accepted as fire drills or practice in traffic rules.

Miss Lenroot expressed the hope that there will be no active recruiting of mothers of young children as the Nation gears itself for

defense. If pending legislation to authorize day care in areas affected by mobilization should pass, Miss Lenroot said that children under 3 years old probably should not be cared for in day-care centers, but in foster-family homes.

Miss Lenroot discussed the Savannah River atomic bomb project in relation to the problem of community services which need to be provided in this and other areas congested by defense preparation. Important questions are how to measure the impact of the increased population in terms of additional health, welfare, and education services; how to help build good relationships between the older and the newer inhabitants in what promises to be a large in-migration.

Emphasis on Research

Melvin Glasser, Executive Director of the White House Conference who was recently named as an Associate Chief of the Children's Bureau, said:

- It is about time we spent as much on child research as we spend on research in television.

- In the bluntest terms, we cannot afford the waste inherent in programs which do not use available knowledge to the fullest.

Timing is Important

A highlight of the session, arranged by Ruth G. Taylor, Chief of the Nursing Section of the Children's Bureau, was an address by Dr. Samuel Wishik, Director of the Bureau of Child Health, New York City Health Department.

The timing of the child's growth is more important than anything else, Dr. Wishik said, because what is right at one time is wrong at another. Just knowing that children do certain things is meaningless unless you know how old the child is and whether it is appropriate to him at his own stage of development.

He discussed the stages in the growth and development of a child (described in the Fact Finding Report of the White House Conference) and how children need to be helped to acquire a sense of trust, autonomy, initiative, accomplishment, identity, and integrity. Nurses and doctors can assist parents to develop these qualities in their children.

Up for Consideration

Other significant problems—all stepped up by the emergency—which State directors discussed included:

- Need for more local or district supervisory nurses to guide inexperienced public health nurses who are assigned to rural areas.

- Increased demand by basic schools of nursing for State public health nurses to give students a broader understanding of public health.

- Need for increased field training facilities for orientation of new staff members, basic nursing students, university public health students.

- Need to stimulate regional planning in order to provide improved educational facilities.

- Need to study the activities of public health nursing to determine how many and what kind of nurses are required for the various functions which make up complete nursing services and to keep step with changing programs. The American Nurses Association is sponsoring a series of studies on hospital nursing services, but may not get to public health nursing services for several years.

- Need for use of nursing skills on jobs demanding them—with auxiliary help for nonprofessional work.

- Expanded recruitment for both basic nursing students and public health nurses.

- Methods for analyzing nursing service in programs to justify use of categorical funds for generalized services.

Combination Services Study

The National Organization for Public Health Nursing's newly published Study of Combination Services in Public Health Nursing is now available at NOPHN, Miss Fillmore told the directors. The combination of services in public health nursing is the system in which all public health nurses in a town—both in official and non-official agencies—work under one agency. About 25 cities throughout the United States are using the system. In some of the towns, all public health nurses work from the local health department. In others, the local visiting nurse service is the operating agency.

Officers of Council

President of the State Directors' Council is Anna R. Moore, Washington; vice president, Rena Haig, California; secretary, Helen Dunn, Maine.

Beginning in 1953, officers will be elected for 2-year terms at the Biennial Conference in Washington. Since 1936, State directors have met annually—a day ahead of the American Public Health Association meetings. At their 1948 session they voted to initiate biennial work conferences with the Children's Bureau and the Public Health Service, pending approval of the Association of State and Territorial Health Officers. The first Biennial Conference was held in 1949.

State directors were welcomed to the 1951 Conference by John L. Thurston, Federal Security Assistant Administrator; Surgeon General Leonard A. Scheele, Public Health Service, and Katharine F. Lenroot, Chief of the Children's Bureau.

The Significance of the Early Diagnosis of Hearing Impairment in Children

By JOHN E. BORDLEY, M.D. and WILLIAM G. HARDY, Ph.D.*

Both public health and school authorities are becoming more and more interested in children with hearing impairment. Chemotherapy, irradiation, advances in electronics, and fresh concepts in educational methods now provide means for prevention of certain types of hearing impairment and a degree of rehabilitation in others that was not possible a few years ago. Preventive efforts are most rewarding during childhood, particularly in the large group who have temporary impairment of hearing or recurring attacks of otitis media at frequent intervals during the winter months. The problem here is to recognize and control any allergy these children may have, remove all hyperplastic lymphoid tissue around the orifice of the Eustachian tubes, and, if necessary, give small doses of aureomycin or some other antibacterial drug throughout the winter months to try to prevent colds. Recurring colds with blocking of the Eustachian tubes lead to changes in the middle ear that interfere with the passage of sound to the cochlea, and, if often repeated, these changes become irreversible.

It is of paramount importance for the individual and for the community of which he is a part that the child with impaired hearing which cannot be reversed begin the necessary auditory, speech, and language training. This requires careful audiologic work and parental guidance so that from the outset the child may be given language and related behavior training that follow normal developmental patterns as closely as possible. The child with a severe hearing impairment is not per se irredeemably strange, or peculiar, or different, and he should not be relegated automatically to a socially segregated state.

To carry out this program on both preventive and rehabilitative levels requires the cooperation of school and health authorities with the audiologist, otologist, pediatrician, and, in some cases, the allergist and psychiatrist.

Extent of Hearing Impairment in Children

There is wide variance of statistics on the frequency of hearing impairment in children. Much of the data is of dubious accuracy, how-

*From the Hearing and Speech Center, Johns Hopkins University and Hospital; the authors are Associate Professors of Otolaryngology and Environmental Medicine.

ever, because of variations in the techniques of testing, the lack of control over acoustic conditions in the testing environment, mistaking a temporary hearing loss for a permanent impairment, and the relative instability of all subjective test responses in young children. Screening-test techniques are improving, and some of the methods already in use are adequate for testing a large group of children. It is safe to assume, in terms of rehabilitation and conservation of hearing, that approximately 5 percent of school-age children have some impairment in one or both ears. In preventive terms, including seasonal temporary or subclinical impairment, the figure is probably closer to 10 percent.

The incidence of a handicapping amount of hearing impairment is more difficult to estimate. Figures range from 0.5 to 2 percent. This variation is due, in part, to the lack of standardization of test techniques, but largely to the difficulty of interpreting the tests and differentiating between impaired auditory function and developmental behavior in the child. A round number of 18,000 is given as the school-age children in the United States with sufficient impairment to warrant the term "deaf." Whether this figure is definitive depends largely on the concept of the word "deafness."

These statistics are largely based on tests of school children from 6 to 15 years of age. Large-scale audiometric measurements of the hearing acuity of children of preschool age have never been carried out. Nor has the significance of the findings in school-age children been applied to the younger age group.

Types of Hearing Impairment

There are three classical types of hearing impairment—conductive, perceptive, and mixed.

Conductive impairment results from mechanical interference with the passage of sound waves through the external canal and ossicular chain to the inner ear or perceptive portion of the auditory apparatus. Either of two conditions usually underlies a conductive impairment: (1) Sound waves are prevented from reaching the middle ear by wax or some other obstruction in the external auditory canal, or (2) normal movement of the ossicles is impaired by changes around the ossicular joints or to changes in the middle ear mucosa that result from Eustachian or auditory tube blockage and infection. Conductive impairment simply diminishes the loudness of sound. It never causes total deafness. This can be demonstrated by bone conduction tests. Moreover, impaired hearing of the conductive type is often reversible in whole or in part, depending upon the nature of the lesion, an early diagnosis, and adequate treatment.

Perceptive impairment is due to atrophy or lack of development of the cochlear nerve or organ-of-corti cells in the inner ear or to a lesion

somewhere along the central auditory pathways. High tones are commonly more affected than low tones. When the hearing loss is severe, however, whatever the cause, both high tones and low tones are markedly impaired. Perceptive impairment may exist because of developmental factors as a result of focal infection, mumps, meningitis, etc., direct extension of a neighboring lesion (brain tumor), or to interference with the circulation of intra-labyrinthine fluids, especially endolymph. It is often an associated condition with certain types of cerebral palsy and must be suspected as a possible concomitant of various forms of cerebral degeneration. Perceptive impairment always involves distortion of sound and may result in total loss of hearing or "deafness" in the true sense of the word. There is, in general, no adequately demonstrated treatment for perceptive impairment.

A mixed impairment is a combination of the two fundamental types. The conductive portion may be reversible in whole or in part, even though the perceptive element is not amenable to treatment.

Finally, in purely functional terms, there is psychogenic hearing impairment which, by definition, presents no symptoms of otic pathology. It is seen most frequently in early adult life, but there is considerable evidence that a psychogenic hearing impairment is by no means rare in children.

Psychoacoustic Considerations

The sounds of ordinary language are highly complex phenomena. The tonal range employed in ordinary speech-hearing is approximately that of a standard piano keyboard. In order that a person may perceive and understand the ordinary conversation that goes on around him, he must have a reasonably balanced auditory perception in the range between 250 (approximately middle C on the piano) and 4000 cycles per second. For the child with a moderately severe type of conductive impairment, the loudness of speech sounds is muffled while in the perceptive type, the clarity is distorted, and discrimination is impaired. Consequently, it is never enough to consider only whether a child hears or does not hear. The point is to determine as precisely as possible what he hears in a variety of acoustic circumstances, and how this hearing is related to his use of language and social maturity.

Diagnostic Considerations

Audiometry is the term applied to the measurement with electronic instruments of auditory acuity for pure tones and speech. The pure-tone audiogram measures the patient's threshold of hearing for certain selected tones, usually across a band of six or seven octaves. It must be emphasized that this is a subjective test. For diagnostic

purposes, audiometry is an exacting procedure that requires considerable knowledge and patience on the part of the physician and concentration and cooperation on the part of the patient. Tuning fork tests aid in localizing the lesion, and speech-hearing tests give valuable information about the patient's ability to discriminate minimal differences in speech sounds and how well he uses what hearing he has.

In the hands of experienced testers, pure-tone audiometry is a useful diagnostic tool for children of school age. The responses of younger children, however, are very inaccurate. The diagnosis of hearing impairment in the child from 1 to 4 or 5 years of age has always been a baffling problem. If the problem were only to determine whether or not a child hears, there would be relatively little difficulty. Tuning forks, bells, clickers, whistles, snappers, and what not, have been used for this purpose, but with little regard for the pitch, the relative loudness, or for their meaning to the child under test. The child who turns his head at the drop of a bunch of keys and therefore presumably "hears" may perceive a high-pitched whistle only as a tiny squeak, or not perceive it at all. The point is that the use of keys, or a coin-click, or a bell offers only a gross test with specific reference to that particular sound. It is quite possible for a child to hear a bunch of keys dropped on a table behind him and yet not hear well enough to be able to imitate any sequence of sounds in ordinary language.

A variety of tests has been devised for young children, many of them dependent upon the use of conditioned response. They all have the disadvantage of dependence on overt or subjective responses on the child's part and are therefore potentially inaccurate for determining hearing thresholds. Recently an objective test, requiring no active cooperation on the part of the child, has been under investigation. The basic principle is that auditory stimuli evoke changes in skin resistance, which can be measured as shifts in voltage. During the past 2 years a technique has been developed by the authors¹ which makes possible an objective audiogram of infants and pre-school-age children that is quite as accurate as the subjective, standard audiogram of older children and some adults. A pure tone from a standard audiometer is sounded in the child's ear, followed a few seconds later by a mild electric shock. Within a few minutes, the child becomes conditioned so that when he hears the tone a change in skin resistance occurs. This response is automatically recorded on a moving sheet of paper. Once this conditioning is established, the

¹ The original work was done in collaboration with Dr. Curt P. Richter in the Phipps Psychobiologic Laboratory. See Bordley, John E., Hardy, William G., and Richter, Curt P.: Audiometry with the use of galvanic skin-resistance response. *Bull. Johns Hopkins Hosp.* 82: 569 (1948); Bordley, John E. and Hardy, William G.: A study in objective audiometry with the use of a psychogalvanometric response. *Ann. Otol., Rhin., and Laryng.* 58: 751 (1949).

threshold of audition for the various frequencies can be determined and recorded in decibels on the standard audiogram chart. By this method, an audiogram can be made on children of any age beyond 9 to 10 months.

Hearing and the Development of Language

The relations between hearing, speech, and language habits, in general, are so much a part of the child's growth and development that they are likely to be taken for granted. The child learns to talk because he hears and as he hears. In the normal course of events, his ability to communicate by sound and to imitate and reproduce the ordered array of sounds that we call language is a developing skill that usually makes its first great spurt at some period between the ages of 24 months and 36 months. By the age of 6 years, the child has learned most of the basic elements of his native language and is able to participate in ordinary communicative experiences.

For educational purposes it has been the practice to classify children in two categories: (1) profound hearing impairment, and (2) those with some lesser degree of impairment. According to this approach, the child whose impairment is congenital or acquired prior to the acquisition of basic language habits and is severe enough to preclude the development of speech is considered deaf. The child whose impairment is severe but not so profound as to preclude the learning of some language habits is considered hard-of-hearing. This differentiation is of dubious validity at the level of diagnosis and audiologic consultation. It is rare since the advent of antibiotics and the prevention of a destructive type of meningitis to find a totally deaf child. If he has any hearing whatever, it can generally be made useful through amplification and special training, with patience and understanding guidance at home, in the clinic, and at school, to facilitate the development of speech and language. The best that is available in pediatrics, maternal and child care, otology, audiology, psychiatry, psychology, and special education should be utilized in the recognition and treatment of these children as early in life as possible. Assuming, within reason, that approximately 5 percent of children have some significant hearing impairment, one must conclude that here is a public health problem of some magnitude.

Clinical Audiology

Adequate handling of the child with impaired hearing involves multiple clinical services. Once the appraisal of the child-as-a-whole has been achieved and the necessary medical and/or surgical procedures completed, the audiologic problems are largely a matter of determining the child's needs in communicative skills in order for him

to learn how to compensate for the deficiencies caused by the hearing impairment.

The basic methods of the nonmedical procedures include: (1) parental instruction; (2) the use of amplification; (3) training in speech (lip) reading; (4) auditory training; (5) speech and language training. Any or all of these remedial steps may be indicated, depending upon the nature of the specific problem. An important consideration is the age of the child. Audiologic work should be started as early as possible, certainly by the age of 2 years. In this regard, a major category of audiology involves an extensive program of parental education.

Excellent special training is now being done with the 3- and 4-year-olds at all levels of hearing impairment from moderate to profound, but only in a few communities is it included in the public educational system. It has been clearly demonstrated that the 5-year-old with a handicapping hearing loss who has had 2 or 3 years of special training is a far different, better adjusted, more educable child than the one who has had nothing but sympathy or misunderstanding. These problems should be met in the preschool-age period.

For the school-age handicapped child, a reasonable line must be drawn between clinical audiology and education. It is not the audiologist's business to educate the child, but to try to see to it that the communicative disorder is correctly evaluated and the necessary remedial or compensatory measures are begun. This means not only conservation of psychosocial adjustment. What measures can and should be taken depend upon the individual child and upon the facilities available. In some rural sections an audiologic clinic in a public health center has proved eminently workable; in other districts a traveling clinic has proved to be the better answer.

Preventive Audiology

Aside from the children in need of special communicative training and possibly a hearing aid, there is a large group who show some hearing loss following colds or who develop otitis media recurrently during the winter. These changes in the ears are usually associated with inflammation in and around the Eustachian tubes. If the acute condition is relieved with antibiotics, but the underlying cause of the ear symptoms (enlarged adenoids) is neither recognized nor corrected, many of these children will develop an irreversible hearing impairment of the conductive type. In the early stages, this type of hearing loss is often not recognized by the parents, who may say the child is inattentive, or by the teachers, who may think of him as inattentive, mischievous, or stupid.

These children live under a nervous strain and must always make a great effort to keep up with their fellows in the classroom and on the

playground. They far outnumber those with profound hearing loss and are equally deserving of attention since the chances are good for restoring the hearing or preventing behavioral difficulties and social maladjustments.

This type of hearing impairment is more likely to occur in the age group from 6 to 12 years than in the younger children. New techniques for the routine school-health screening tests now make it possible to pick up many of these children. These screening tests merely point out those with impaired hearing. What is needed now in the school system is a well-trained group to carry out the clinical services for these children. The methods of treatment such as irradiation and surgery are well known; the details of policy, administration, and finance must be worked out.

Many good clinics, or types of clinical services, have been established in various parts of the country. In such centers, children are examined by well-trained otologists and, when it is indicated, receive necessary treatment; referrals to the family's private otologist are made for surgery as indicated. In a very few places, as yet, special services in audiology and mental hygiene are available for consultative handling of problems involving communicative disorders and behavioral maladjustments; these services are carried out in close conjunction with those of the clinical otologist.

Thousands of children have already had the advantage of such referrals. Complete success in preventive terms will not be achieved, however, until systematic screening methods and thorough follow-up can be established for both school- and preschool-age groups, in metropolitan communities and in rural districts. It is reasonable to believe that the expenditures incurred would be readily met by savings in special education and cost of repeating grades.

Conclusion

Up to the present time, the problems relating to impaired hearing have been largely centered in the school-age child, ostensibly because the impairment interferes with formal education. To the child, however, hearing impairment in the preschool years is even more important. It interferes with his acquisition of language and with his psychosocial development. Early diagnosis offers the only reasonable possibility of preventing untoward and undesirable changes in the preschool years.

The key to adequate preventive steps is the awareness on the part of the pediatrician that children with impaired hearing have a different behavioral pattern from children with normal hearing. In general, a differential diagnosis of deviant behavior is best preceded by auditory and visual tests and by psychometric tests adequately designed to offer qualitative results in both language- and nonlanguage-related performance, behavior, and learning capacity.

Accordingly, the ideal program would center in the pediatric clinic wherein the core of the clinical effort is complete evaluation of the child. In such a program, it becomes the pediatrician's responsibility to apprehend the possibility of hearing impairment and to confirm the diagnosis by referral. Once the diagnosis is established, the details of treatment, clinical follow-up, and whatever special consultation or training is indicated are carried out in a linear fashion so that the steps between diagnosis and recovery or rehabilitation follow through in regular sequence. In such terms, the necessary education of both the parents and their children with impairment follows in its proper order from cause to effect. Obviously, by the time he reaches school age, the child whose problems of hearing impairment have been so handled is in much better condition, physically and behaviorally, to face the changing pressures of school life. It is believed that, so organized, the problem of early diagnosis and treatment of preschool-age children with hearing impairment is the province of the medical field and is best handled at the public health level.

Rehabilitation: The Role of the Health Department

By A. L. CHAPMAN, M.D., and J. H. GERBER, M.D.*

"Rehabilitation" means different things to different people. To the nutritionist it means the restoration of health through supplementation of an inadequate diet; to the vocational teacher it means training the handicapped person for employment; and to the brace maker it means the fitting of a prosthetic appliance. To us, as it does to an increasing number of workers in the public health field, it means the physical, mental, social, and—whenever possible—vocational adjustment of an individual who has been disabled by illness or injury.

This broad comprehensive definition calls for the availability of a variety of services—definitive medical care, psychology, psychiatry, physical therapy, occupational therapy, speech therapy, social service, recreation, financial aid, counseling and guidance, vocational training, selective job placement, and follow-up. All of these must be adapted to the individual needs of the patient who may be deformed or paralyzed, blind or deaf, tuberculous or cardiac. For maximum results there must be the closest cooperation of all the voluntary and official community agencies with each other and with the medical profession.

Should rehabilitation be a concern of public health departments? We believe with Mustard (1) that a health program becomes one of public health interest when it can no longer be solved by the unassisted efforts of the citizen and the uncoordinated resources of the community. A rehabilitation program obviously requires community action and should, therefore, be a matter of concern to all public health workers.

Many official and voluntary agencies are at present engaged in programs of rehabilitation. The Veterans Administration has an extensive program for its beneficiaries. The Federal Office of Vocational Rehabilitation provides grants-in-aid to States for a broad program encompassing all types of services necessary to achieve the goal of returning handicapped civilians to full or part-time employment. Such programs are now operating in all States, the District of Columbia, Hawaii, and Puerto Rico. They are, however, hampered by insufficient appropriations. Numerous voluntary agencies have interested themselves in the rehabilitation of specific disability groups such as cerebral palsy, multiple sclerosis, and epilepsy.

*Medical Director, and Senior Surgeon (R), Public Health Service.

There is a distinct trend in the direction of comprehensive rehabilitation programs organized as rehabilitation centers and designed particularly to provide services to severely handicapped individuals. A number of such centers are now functioning under voluntary auspices. At least one is operated by a State Vocational Rehabilitation Agency.

The exact number of people who could immediately benefit from rehabilitation services is unknown. We do know, however, that the spectacular medical and public health successes of the recent past have made possible the survival of many people with disabilities of various degree. According to the most reliable data available (2), obtained through national and local surveys, there are approximately 2,000,000 adults with orthopedic impairments, 370,000 crippled children, 10,000,000 cardiovascular cases, 900,000 diabetics, 300,000 active tuberculosis patients, 230,000 blind, and 7,000,000 to 14,000,000 hard-of-hearing. And daily this backlog of patients is being swelled by untold numbers of new cases.

Many of these have residual capacities that can be developed or lost functions for which substitutions can be made through retraining or prosthetic appliances. Many can be taught to appreciate their remaining abilities and to live within them. Many can be brought to the level of self-help and even to self-support. There has been ample demonstration of this in the centers now functioning.

Restorative medicine is a difficult art under the best of conditions. When applied late the difficulties are multiplied many times; for to the original disease or injury have been added the destructive effects of neglect so appallingly evident in so many of the back-log cases—ankyloses, contractures, muscular atrophy, apathy, and discouragement. If maximum results are to be obtained, diagnosis must be made early; treatment must be instituted early, and rehabilitation must be started early—preferably at the time of diagnosis. Obviously, facilities and personnel must be readily available.

Many people play a part—sometimes directly and sometimes indirectly—in helping the disabled back toward normalcy. A friendly nurse visiting a bedridden arthritic person in the home actually is promoting restoration by her cheerfulness and optimism. A medical social worker whose knowledge of community resources permits her to bring increased cash benefits or needed medical service to a chronically ill welfare client is doing much to restore function. The private physician who prescribes limited exercise for his cardiac patient is an important member of the team.

But this is the provision of restorative services in a disorganized and unsystematized fashion. Each service is beneficial in itself, but more—much more—is required.

Community organization is necessary—a type of community organ-

ization that enlists and uses every service of every agency and every person who can contribute to the maximum development in the disabled of their residual capacities for more satisfying living.

Who should head up this organization? What agencies should promote its formation? The answers will vary for each community depending on the resources within it.

Is there an interested and active representative of the State Rehabilitation Division present? Let him head it up. Is the health officer keenly aware of a great deficit in rehabilitation services in his community, and is he anxious to do something about correcting it? Let him head it up. Perhaps a private physician or a club woman or social worker has a deep interest in this field. Let one of them assume the leadership.

At this moment the problem is not "*Who* should take the lead?" but "*Will someone* take the lead?" This is the time to accept the leadership of any qualified leader so that services may be provided. Later on, after an organization has been developed, there will be time to modify, expand, and improve.

There are seven major phases, as we see it, in the provision of a total rehabilitation program in a community. The health department has a role to play in each of them. Where the service is being provided by another agency, official or voluntary, the health officer can cooperate to improve and expand it. If a service is not available, the health officer can join with other agencies in arranging for its provision.

It cannot be stressed too strongly that all phases of the rehabilitation program must be linked into a continuous plan. Coordinative service can best be performed, under medical supervision, by a case worker. The case worker may be employed by the State Rehabilitation Division (whose vocational counselors have had notable experience in this field), the rehabilitation center, the health department, or some other responsible official or voluntary agency.

The first phase in the restoration of function is case finding. This is no new activity for the public health worker. Instead of limiting the search to those suffering from scarlet fever and diphtheria, poliomyelitis and rheumatic fever, attention is directed as well to arthritics and cardiacs, the blind and the deaf, the paralyzed and the deformed.

Here again, as in most new public health programs, an added burden will be placed on the shoulders of the busy public health nurse. Fortunately, the acute communicable diseases are rapidly coming under control, and progress in this area will permit her to devote more of her time to this newer field.

The zeal with which the public health nurse seeks out the chronically ill and disabled will depend in large measure upon the enthusiasm of the health officer for the program and the existence of facilities for aiding these patients once they are found.

The second phase of this program is the provision of diagnostic facilities to determine the nature and extent of lost physical and mental functions and an evaluation of potential residual abilities. It is not sufficient for the physician to make a diagnosis based on pathology alone. This diagnosis must be translated into terms of impaired function. The ability of the patient to adapt himself to his limitations, his emotional reactions to his disability, his past employment, and his hopes for the future must be determined.

In few communities do all the required rehabilitation diagnostic services exist at the present time. The local health officer could spearhead a community effort to establish them, or he could serve as a member of an organizing group.

In connection with the establishment of diagnostic facilities, one of the greatest difficulties at the present time is the procurement of the services of a physician trained in rehabilitation. Unless a physician has had at least basic training in this field, it is difficult for him to develop a rehabilitation point of view. Without such a point of view, he will continue to make pathologic diagnoses based on the traditional concepts of medicine and surgery.

If no local physician has had training in rehabilitation, an important responsibility of the health officer would be to encourage and to assist one or more physicians to obtain such training. Fortunately, several medical schools and hospitals in the country are now providing courses in this field.

The third phase of the program is the writing of the rehabilitation prescription—the plan of the services to be provided. It should include the regimen of physiotherapy, occupational therapy, psychotherapy, diet, rest, and exercise required for the restoration of specific functions that have been lost, or the development of others to replace them. Consideration must be given to the social and vocational needs of the individual as well as to his physical and mental needs. This plan of action can only be written by a team of experts in the indicated fields under the supervision of a clinician trained in rehabilitation. The health officer and his staff should be prepared to provide such expert assistance as the situation may demand.

The fourth phase involves the filling of the prescription. It is filled by physicians, therapists, social workers, nurses, nutritionists, counselors, and vocational teachers. They provide their services in rehabilitation divisions of hospitals, in affiliated rehabilitation centers, in home care programs, in custodial institutions, or in private homes. Their services are given under the supervision of rehabilitation specialists in consultation with family physicians. These personnel may be employed full- or part-time by the local health department, by the hospital, or by some other community agency. With this in

mind, the alert health officer will begin to train key personnel in the fundamentals of rehabilitation techniques. He will begin to place new job descriptions in his budget. And he will begin to define the necessary relationships with community hospitals and other voluntary and official agencies.

The fifth phase—vocational training—involves the sharpening of existing occupational skills or the development of new ones. The abilities, capacities, and previous experiences of the patient must be carefully evaluated in order that training may be directed in the proper channels. This training can be started advantageously in the hospital and continued in the home, the convalescent institution, the sheltered work shop, or on the job itself, depending on the degree to which work tolerance has been developed. Such a program demands the availability of many community resources which at present are too frequently inadequate. Here the health officer can be of inestimable value in assisting in the improvement and expansion of facilities and in the creation of new ones.

The sixth phase—job placement—is the ultimate aim of the vocational rehabilitation program. There can be no great success in this area until employers, personnel managers, industrial physicians, and labor unions are ready and willing to provide jobs to the handicapped. Here again the health officer is in a strategic position to offer considerable help in spreading the information that rehabilitated people make safe, steady, and productive workers. Sufficient convincing evidence on this score is available (3).

The seventh phase is case follow-up. This involves the maintenance of a health record for every rehabilitation patient, the provision of continuous medical supervision, and—most important—continuous encouragement in order to help him remain at his peak level of improvement. The patient himself has to work hard at it, but he needs all the support he can get. The health officer and his staff can be of great assistance in this phase of the program.

An important function of the health officer is to make known to the public, to physicians, to appropriating bodies, to employers, and to all public health workers the true value of rehabilitation to the community as well as to the individuals directly affected. Aside from the humanitarian results, the benefits to the community in decreased dependency of the disabled must be stressed. For example, without rehabilitation a disabled person frequently becomes a public liability at an annual cost of between \$350 to \$600, whereas each successful rehabilitation case costs approximately \$460—a one-time expenditure. It is important for the community to know that, from our present experience, for every dollar spent by the Federal Government on his rehabilitation, the average disabled person will pay \$10 in Federal income taxes (4).

The benefits of rehabilitation were established during World War I, but except for a few notable instances interest in this field soon lagged. Under the stimulation of World War II, old techniques were refined and new ones were developed. Rehabilitation programs for military personnel were tremendously expanded. Following the war, these services became available on a modest scale to civilians, but there remains a widespread lack of adequate facilities and of professional personnel trained in the special techniques required. Health departments on all levels have a definite role to play in seeing that these services are made available to every individual, disabled by illness or injury, who may be able to benefit from them.

REFERENCES

- (1) Mustard, Harry S.: Government in Public Health. New York, Commonwealth Fund, 1945, pp. 4-6.
- (2) Rusk, Howard A. and Taylor, Eugene J.: Physical disability: A national problem. *Am. J. Pub. Health* **38**: 1381-1386 (1948).
- (3) Harvey, Verne K. and Luongo, E. Parker: Physical impairment and job performance, *J. A. M. A.* **127**: 901-907; 961-970 (1945).
- (4) Vocational Rehabilitation for Civilians. Office of Vocational Rehabilitation, Washington, D. C., 1949.

Personnel Needs in the Environmental Health and Sanitation Field

By ARTHUR P. MILLER*

Repeated inquiries about job availability from men who will soon graduate from colleges and universities after completing the sanitary engineering curricula, and from professors of sanitary engineering prompted the collection of current facts on present vacancies in the organizations of official agencies engaged in public health work.

Although information about current vacancies was of first importance in this investigation, some facts about future needs for both sanitary engineers and other professional categories utilized in environmental health work were sought at the same time. This inquiry was initiated before the defense effort had gained its present momentum; hence, it is emphasized that these estimates are based on normal, "peacetime" conditions.

The data were collected with the assistance of the Public Health Service regional engineers and their counterparts in the State health departments during the period October 23, 1950 to February 1, 1951. No information was received from two States and only partial figures were obtained for two others.

The results of the inquiry are summarized below:

Personnel needs for environmental health and sanitation activities

	State level		City, county, other levels		Totals	
	Professional engineers	All other professional categories	Professional engineers	All other professional categories	Professional engineers	All other professional categories
Number of existing vacancies for which funds are available.....	74	57	33	95	107	152
In terms of current programs, number of additional persons who could be used if funds were available.....	250	167	232	714	482	881
In terms of anticipated requirements 5 years from the inquiry date, total number (present and future) of personnel required.....	1,047	732	527	3,850	1,574	4,582
Totals.....	1,371	956	792	4,659	2,163	5,615

*Sanitary Engineer Director, Division of Engineering Resources, Public Health Service.

Incidence of Disease

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

Reports From States for Week Ending April 7, 1951

Influenza

In collaboration with the Influenza Information Center, National Institutes of Health, the following report on influenza has been prepared.

The total number of influenza cases reported for the current week was 7,253, a decline from the 8,982 reported last week. For the corresponding week last year, 9,487 cases were reported.

Dr. James C. Hart, Director, Connecticut Department of Health, stated that the following cases of influenza were reported: January, 8; February, 696; and March (1st to 25th, inclusive), 2,294. Paired blood samples from 69 patients have been received by the State health department laboratory for hemagglutination inhibition tests for influenza. Out of these, 26 were negative, 27 showed a rising titer for A-prime, 12 showed a rising titer for A and A-prime, and 5 had a high titer for A-prime in both acute and convalescent blood samples (probably due to late taking of the acute specimen). The confirmed cases are reported from eight different townships of the State and appear to be a representative group of those cases reported during the present epidemic.

Dr. M. Michael Sigel of the collaborating laboratory at the Children's Hospital of Philadelphia reports a total of 115 paired sera which showed a rise in titer against influenza A as demonstrated in the complement fixation test for the period from January 1 to March 22, 1951. Of these, 83 cases were clinically diagnosed as influenza, 31 as pneumonia, and 1 as gastroenteritis. There was no serologic evidence of infection with either influenza B or strain 1233 in sera tested during this period. Influenza cases reported to the Philadelphia Department of Health have decreased considerably in the last few weeks.

Dr. Albert Milzer of the collaborating laboratory at the Michael Reese Hospital, Chicago, reports a significant rise (at least fourfold) in complement-fixing antibody titer in paired sera against the Lee strain of influenza B virus in six patients, the FM-1 strain of influenza A-prime in one patient, and the Thompson strain of influenza A-prime in two patients.

Dr. E. H. Lennette, Director of the Regional Laboratory in Berkeley, Calif., reports a rise in complement-fixing antibody titer in 58 paired sera against influenza A, and a rise in 1 paired sera against influenza B tested during the week of March 24 to 30.

The Preventive Medicine Division of the Surgeon General's office of the Army, reports two paired sera showing a rise in titer for both A and A-prime. One case was from a military installation in Virginia and one in Ohio. Influenza A-prime virus has been isolated recently from two cases—one from a military installation in Maryland and one in Kentucky.

Dr. D. S. Flurry reports that 11 paired sera specimens showed a significant increase in antibody titer with the PR-8 strain; 10 of the 11 showed an increase with the FM-1 strain of influenza virus in the hemagglutination inhibition test. None of these showed a significant rise with influenza B virus.

Dr. Irving Gordon, Director of the Regional Laboratory, New York State Department of Health, has studied antigenically four more recently isolated influenza virus strains. Like those previously isolated this year, they resemble the 1950 A-prime strain much more closely than the FM-1 strain.

Measles

Reported cases of measles increased from 19,548 last week to 20,707 for the current week. For the corresponding week last year, 10,209 cases of measles were reported.

Epidemiological Reports

Food Poisoning

Dr. James R. Enright, Chief, Bureau of Epidemiology, Territory of Hawaii Department of Health, reports that 135 cases of staphylococcal food poisoning occurred following a lunch in a Honolulu high school. All but 2 of the patients were children, and 59 were hospitalized. The first case of illness occurred Friday, March 30, about 2 p. m. Practically all the affected students recovered and attended school the following Monday. Of the 1,200 meals served that day, 1,000 included baked, smoked picnic ham shoulder which was the only food common to all those becoming ill. The illness developed about 2½ hours after eating when the children were stricken suddenly with nausea, vomiting, and prostration. Laboratory examination of ham samples resulted in cultures of a gram positive, hemolytic, mannite, fermenting coagulase positive *Micrococcus* (*Staphylococcus*) *pyogenes* var. *aureus*. The colony count was about 10 million per gram. The same organism was isolated from two samples of vomitus. The conclusion as to the cause of the illnesses was that the infection of the food occurred during processing at the cafeteria, perhaps following

the boiling and baking. The ham was de-boned and processed by two experienced cafeteria workers who had no symptoms of colds or sore throat and who had no infected cuts on their hands or arms. The cause of illness is presumed to be staphylococcal enterotoxin.

Dr. W. L. Halverson, California Director of Public Health, reports two outbreaks of food poisoning in which 15 and 25 persons in each group were affected. Creamed ham and eggs served in one restaurant was eaten by 15 persons who become ill 5 to 12 hours after eating. In the second outbreak, corned beef, served by popular resort establishment was regarded as responsible for 25 cases. Laboratory reports have not been completed.

Typhoid Fever

Dr. H. M. Erickson, Oregon State Health Officer, reports finding the source of three cases of typhoid fever out of a total of six this year. One child was infected by his grandmother, probably through food, while visiting her home. Two cases were traced to raw milk in a one-cow dairy where both the proprietor and his wife were found to be typhoid fever carriers.

Comparative Data For Cases of Specified Reportable Diseases: United States

[Numbers after diseases are International List numbers, 1948 revision]

Disease	Total for week ended—		5-year median 1946-50	Seasonal low week	Cumulative total since seasonal low week		5-year median 1945-46 through 1949-50	Cumulative total for calendar year—		5-year median 1946-50
	Apr. 7, 1951	Apr. 8, 1950			1950-51	1949-50		1951	1950	
Anthrax (062)	2	1	1	(1)	(1)	(1)	(1)	22	8	14
Diphtheria (055)	67	116	135	27th	4,182	6,397	9,218	1,275	2,126	2,860
Encephalitis, acute infectious (082)	15	8	7	(1)	(1)	(1)	(1)	202	175	112
Influenza (480-483)	7,253	9,487	1,598	30th	111,993	125,845	125,845	97,451	115,261	115,261
Measles (085)	20,707	10,209	25,842	35th	225,901	126,444	259,994	197,200	107,314	225,048
Meningitis, meningococcal (057.0)	94	109	87	37th	² 2,459	2,252	2,172	² 1,498	1,338	1,200
Pneumonia (490-493)	2,417	2,492	---	(1)	(1)	(1)	(1)	28,618	36,290	---
Poliomyelitis, acute (080)	58	63	37	11th	145	187	88	1,357	1,318	689
Rocky Mountain spotted fever (104)	---	3	---	(1)	(1)	(1)	(1)	4	15	12
Scarlet fever (050) ²	2,132	1,557	2,354	32d	47,763	41,321	61,981	32,072	24,882	38,223
Smallpox (084)	---	1	3	35th	13	39	57	5	18	36
Tularemia (059)	9	13	18	(1)	(1)	(1)	(1)	197	300	300
Typhoid and paratyphoid fever (040, 041) ⁴	29	40	40	11th	117	132	133	552	642	631
Whooping cough (056)	1,302	2,373	2,019	39th	43,379	57,754	57,754	21,777	36,218	30,757

¹ Not computed. ² Addition—Maine, week ended February 10, 1 case. Deduction—North Carolina, week ended March 17, 1 case. ³ Including cases reported as streptococcal sore throat. ⁴ Including cases reported as salmonellosis.

Note.—Cumulative figures changed by delayed reports from California and Idaho.

Reported Cases of Selected Communicable Diseases: United States, Week Ended April 7, 1951

[Numbers under diseases are International List numbers, 1948 revision]

Area	Diph- theria (055)	Enceph- alitis, in- fectious (082)	Influenza (480-483)	Measles (085)	Meningi- tis, men- ingococcal (057.0)	Pneu- monia (490-493)	Polio- myelitis (080)
United States	67	15	7, 253	20, 707	94	2, 417	58
New England	3		343	759	3	74	
Maine			242	2		19	
New Hampshire			34	36		7	
Vermont			15	104	1		
Massachusetts	3			563			
Rhode Island			1			4	
Connecticut			51	54	2	44	
Middle Atlantic	3	2	214	2, 508	18	203	6
New York	3	1	100	721	5	37	5
New Jersey		1	114	546	2	82	1
Pennsylvania				1, 241	11	84	
East North Central	5	4	145	3, 373	13	284	4
Ohio				995	3		1
Indiana	3		4	114		12	
Illinois		1	22	559	6	122	1
Michigan	2	3	119	600	3	150	2
Wisconsin				1, 105	1		
West North Central	7		30	1, 047	3	214	12
Minnesota	4		2	113	1	11	
Iowa				34	1		2
Missouri	1		6	200		2	
North Dakota	1		21	69	1	176	
South Dakota			1	29			9
Nebraska	1			17			1
Kansas				585		25	
South Atlantic	14	4	3, 784	1, 648	21	542	13
Delaware			11	20	1		
Maryland	2		14	180	1	54	
District of Columbia			1	43		20	
Virginia			512	694	3	86	
West Virginia	3		2, 449	132	6	47	2
North Carolina	2	3		104	2		
South Carolina			124	18	2	15	
Georgia	5	1	673	399	1	320	6
Florida	2			58	5		5
East South Central	10	2	121	729	9	167	6
Kentucky	2		7	487	1	10	
Tennessee	4	2	94	98	4		1
Alabama	2			86	1	123	4
Mississippi	2		20	58	3	34	1
West South Central	23	3	1, 107	4, 635	17	686	10
Arkansas	2		847	324		88	
Louisiana	1		21	74	3	38	2
Oklahoma	4		239	358	1	51	2
Texas	16	3		3, 879	13	509	6
Mountain			911	1, 641	1	135	
Montana			24	43	1		
Idaho				29			
Wyoming				74		1	
Colorado			16	709		61	
New Mexico			16	83		19	
Arizona			855	637		54	
Utah				45			
Nevada				21			
Pacific	2		598	4, 367	9	112	7
Washington			144	821	4	5	
Oregon			314	442	3	37	
California	2		140	3, 104	2	70	7
Alaska			12				
Hawaii			5	8			

¹ New York City only.

Anthrax: Massachusetts and New Jersey, 1 case each.

Reported Cases of Selected Communicable Diseases: United States, Week Ended April 7, 1951—Continued

[Numbers under diseases are International List numbers, 1948 revision]

Area	Rocky Mountain spotted fever (104)	Scarlet fever (050)	Small-pox (084)	Tulare-mia (059)	Typhoid and para-typhoid fever ¹ (040,041)	Whoop-ing cough (056)	Rabies in animals
United States.....		2, 132		9	29	1, 302	139
New England.....		190			2	97	
Maine.....		9			1	20	
New Hampshire.....		9				3	
Vermont.....		3				8	
Massachusetts.....		137			1	52	
Rhode Island.....		6				9	
Connecticut.....		26				5	
Middle Atlantic.....		340			6	170	12
New York.....		156			5	40	12
New Jersey.....		44				51	
Pennsylvania.....		140			1	79	
East North Central.....		657			1	171	13
Ohio.....		189				38	1
Indiana.....		47				7	10
Illinois.....		117			1	38	1
Michigan.....		243				40	1
Wisconsin.....		61				48	
West North Central.....		162			2	83	27
Minnesota.....		43				4	1
Iowa.....		10				3	17
Missouri.....		43			1	4	9
North Dakota.....						2	
South Dakota.....		5				3	
Nebraska.....		16				5	
Kansas.....		45			1	62	
South Atlantic.....		211		3	3	204	20
Delaware.....		2				5	
Maryland.....		34				11	
District of Columbia.....		17				3	
Virginia.....		36				24	
West Virginia.....		44			1	52	4
North Carolina.....		48				47	
South Carolina.....		3		2		6	10
Georgia.....		17		1	2	43	6
Florida.....		10				13	
East South Central.....		60			2	29	26
Kentucky.....		21			2	1	7
Tennessee.....		31				11	10
Alabama.....		5				12	8
Mississippi.....		3				5	1
West South Central.....		87		3	3	385	40
Arkansas.....		3		2		17	7
Louisiana.....		12				1	
Oklahoma.....		20		1		24	3
Texas.....		52			3	343	30
Mountain.....		109		3	2	116	
Montana.....		8				16	
Idaho.....		19				2	
Wyoming.....		1		3	1	2	
Colorado.....		20			1	13	
New Mexico.....		4				22	
Arizona.....		4				59	
Utah.....		53				2	
Nevada.....							
Pacific.....		316			8	47	1
Washington.....		91				11	1
Oregon.....		43				3	
California.....		182			8	33	
Alaska.....							
Hawaii.....		2			1		

¹ Including cases reported as salmonellosis.

² Including cases reported as streptococcal sore throat

FOREIGN REPORTS

CANADA

Reported Cases of Certain Diseases—Week Ended Mar. 24, 1951

Disease	Total	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Brucellosis	3					3					
Chickenpox	629			4		110	323	11	21	56	104
Diphtheria	3	1				2					
Dysentery, bacillary	8					3		3			2
Encephalitis, infectious	2								1	1	
German measles	286			46		12	164		11	21	32
Influenza	1,831	15		77	14		9	69	4		1,643
Measles	950	5		36		79	668	52	6	40	64
Meningitis, meningococcal	6				2		2	2			
Mumps	787			4	1	220	260	17	76	98	111
Scarlet fever	221			2		54	45	19	10	36	55
Tuberculosis (all forms)	158	3		4	10	74	19	9	11	1	27
Typhoid and paratyphoid fever	9					5	1				3
Venereal diseases:											
Gonorrhea	189			4	8	29	32	22	10	35	49
Syphilis	93	5		4	5	39	20	1	6		13
Primary	6	1		1		1	2				1
Secondary	7	2				1	3				1
Other	80	2		3	5	37	15	1	6		11
Whooping cough	81			3	1	17	39			10	11

CUBA

Reported Cases of Certain Diseases—4 Weeks Ended Jan. 27, 1951

Disease	Pinar del Rio	Habana		Matanzas	Santa Clara	Camaguey	Oriente	Total
		Habana City	Total					
Cancer	4		26	12	24	2	12	80
Chickenpox		17	17	3			5	25
Diphtheria	2	5	6	4	2		2	16
Hookworm disease			12					12
Leprosy			3		1		1	5
Malaria			1			1	90	92
Measles		11	12		19		68	99
Poliomyelitis			1		1	1		3
Tetanus						1		1
Tuberculosis	4		13	14	7	10	6	54
Typhoid fever	3	3	6	2	1	1	5	18
Whooping cough			1		6	1	26	34

FINLAND

Reported Cases of Certain Diseases—January 1951

Disease	Cases	Disease	Cases
Diphtheria.....	93	Typhoid fever.....	7
Meningitis, meningococcal.....	3	Veneral diseases:	
Paratyphoid fever.....	30	Gonorrhea.....	383
Poliomyelitis.....	16	Syphilis.....	31
Scarlet fever.....	2,599		

JAMAICA

Reported Cases of Certain Diseases—4 Weeks Ended Feb. 24, 1951

Disease	Kingston	Other localities	Total
Chickenpox.....	6	26	32
Diphtheria.....	3	5	8
Dysentery, unspecified.....	5		5
Leprosy.....	1	1	2
Meningitis, meningococcal.....		1	1
Ophthalmia neonatorum.....	1		1
Poliomyelitis.....	1		1
Puerperal sepsis.....		1	1
Scarlet fever.....		1	1
Tuberculosis, pulmonary.....	19	53	72
Typhoid fever.....	11	57	68

MADAGASCAR

Reported Cases of Certain Diseases and Deaths—December 1950

Disease	Aliens		Natives	
	Cases	Deaths	Cases	Deaths
Beriberi.....			2	
Bilharziasis.....			20	
Diphtheria.....	2	1	7	3
Dysentery:				
Amebic.....	4		117	
Bacillary.....	1		18	
Erysipelas.....			7	
Influenza.....	14		2,440	13
Leprosy.....			35	
Malaria.....	233	2	32,399	141
Measles.....	9		157	
Meningitis, meningococcal.....			1	
Mumps.....			84	
Plague.....			49	38
Pneumonia (all forms).....	1		739	46
Puerperal infection.....			9	
Scarlet fever.....			2	
Trachoma.....	2		2	1
Tuberculosis, respiratory.....	5	2	90	15
Typhoid fever.....	8		6	1
Whooping cough.....	3		268	3

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The following tables are not complete or final for the list of countries included or for the figures given. Since many of the figures are from weekly reports, the accumulated totals are for approximate dates.

CHOLERA

[Cases]

Place	January-February 1951	March 1951—week ended—				
		3	10	17	24	31
ASIA						
Burma.....	456	1 8	1 6	1 2 27	1 14	1 43
Akyab.....	7					
Bassein.....	78	4		2		5
Moulmein.....	1	4	6	24	14	38
Rangoon.....	10			1		
India.....	20,670	1 114	1 137	1 190	1 126	1 158
Bombay.....	1					
Calcutta.....	565	86	107	168	117	150
Cuddalore.....	3					4
Madras.....	88	10	7	7	3	3
Nagpur.....	58			9		
Negapatam.....	68	4	9	3	3	
Tiruchirappalli.....	71	14	9	2	3	1
Tuticorin.....	23		5	1		
India (French):						
Karikal.....	33		3	1		
Pondicherry.....	67	15	16	11		
Indochina:						
Cambodia.....	30			1	4	
Viet Nam.....	5		2			
Haiphong.....	3					
Soc Trang.....	1		1			
Pakistan.....	3,633	201	1 1	1 4	1 4	1 3
Chittagong.....	1		1	2	4	3
Dacca.....	18	2		2		

¹ Preliminary. ² Including imported cases. ³ Imported.

PLAGUE

[Cases]

AFRICA						
Belgian Congo.....	2	1	1		3	
Stanleyville Province.....	2	1	1		3	
British East Africa:						
Tanganyika.....					1 19	
Madagascar.....	86		2 4			
Union of South Africa.....	1					
Orange Free State.....	1					
ASIA						
Burma.....	150	46	10	8		
Tavoy.....			1	1		
India.....	2,546	2 7	2 14	2 6	2 9	2 14
Allahabad.....	4 4	4 5	4 4	4 2	4 7	4 14
Bombay.....				4 1		
Cawnpore.....		2				
Lucknow.....	4 3		4 3	1	2	
Nagpur.....			7	2		
Indochina:						
Cambodia.....			1	2	3	
Pnom Penh.....			1	2	3	
Viet Nam.....	14					2
Phanthiet.....	9					2
Indonesia:						
Java.....	2 4					
Djakarta.....	4 1					
Jogjakarta.....	2					
Semarang.....	4 1					
Thailand.....	7					

¹ Includes suspected cases. ² Mar. 1-10, 1951. ³ Preliminary figure. ⁴ Imported. ⁵ Includes imported cases.

SMALLPOX

[Cases]

Place	January-February 1951	March 1951—week ended—				
		3	10	17	24	31
AFRICA						
Algeria	16					
Belgian Congo	306	39	39			
British East Africa:						
Kenya	1					
Nyasaland	13					
Tanganyika	59					
Cameroon (British)	4					
Cameroon (French)	50		15			
Egypt		1				
Ethiopia	5					
French Equatorial Africa	28		12			
French West Africa	719		188	118		
Dahomey	229		135	13		
Guinea	7					
Ivory Coast	49		16	3		
Niger Territory	138		19	18		
Sudan	214		116	50		
Upper Volta	82		122	34		
Gold Coast	265		12	18		
Morocco (French)	5					
Mozambique	26					
Nigeria	1,852					
Rhodesia:						
Southern	89					
Sudan (Anglo-Egyptian)	12	1		1	1	
Togo (French)	21		11			
ASIA						
Afghanistan	97	4				
Burma	228	31	86	48	11	
Ceylon				1		
China	3					
India	34,167	9,074	5,537	3,314	757	852
India (French)	658	149	220	307		
India (Portuguese)	58		18			
Indochina:						
Cambodia	55	7		3	8	
Viet Nam	32	11	14	21		47
Indonesia:						
Borneo	266					
Java	77	1	7	9	2	
Iran	120	12	10	16		
Iraq	100	1	3	5	2	1
Japan	16	4	1	1	1	
Oman			1			
Pakistan	10,600	1,739	454	255	9	
Straits Settlements	1					
Thailand	26					
EUROPE						
Great Britain:						
England:						
Brighton	15					
SOUTH AMERICA						
British Guiana	8					
Ecuador	21					

¹ Mar. 1-10, 1951.

² Mar. 11-20, 1951.

³ Preliminary figure.

⁴ Imported.

TYPHUS FEVER*

[Cases]

AFRICA						
Algeria.....	5					
British East Africa:						
Somaliland.....	1					
Egypt.....	34	1			4	1
Eritrea.....	4					
Ethiopia.....	141	28	24			
Libya:						
Tripolitania.....	1	1				
Morocco (French).....	1		11			
Tunisia.....	1					

TYPHUS FEVER*—Continued

[Cases]

Place	January-February 1951	March 1951—week ended—				
		3	10	17	24	31
ASIA						
Afghanistan.....	94	2	7			
India.....	10		1	5		
India (Portuguese).....	12	5	2			
Indochina: Viet Nam.....	11		1			
Iran.....	50	16	7	10		
Iraq.....	5	1	1	4	2	11
Israel.....				2		
Japan.....	2					
Pakistan.....	5	3	1			
Syria.....			1			
Transjordan.....	1		1	4	7	
Turkey.....	45		1	3	3	6
EUROPE						
Yugoslavia.....	21					
NORTH AMERICA						
Jamaica ¹	1					
Mexico.....	11	7				
SOUTH AMERICA						
Chile.....	20					
Ecuador.....	100					
Paraguay.....	11					
Venezuela ²	2					

* Reports from some areas are probably murine type, while others include both murine and louse-borne types.

¹ Mar. 1-10, 1951.

² Imported.

³ Includes murine type.

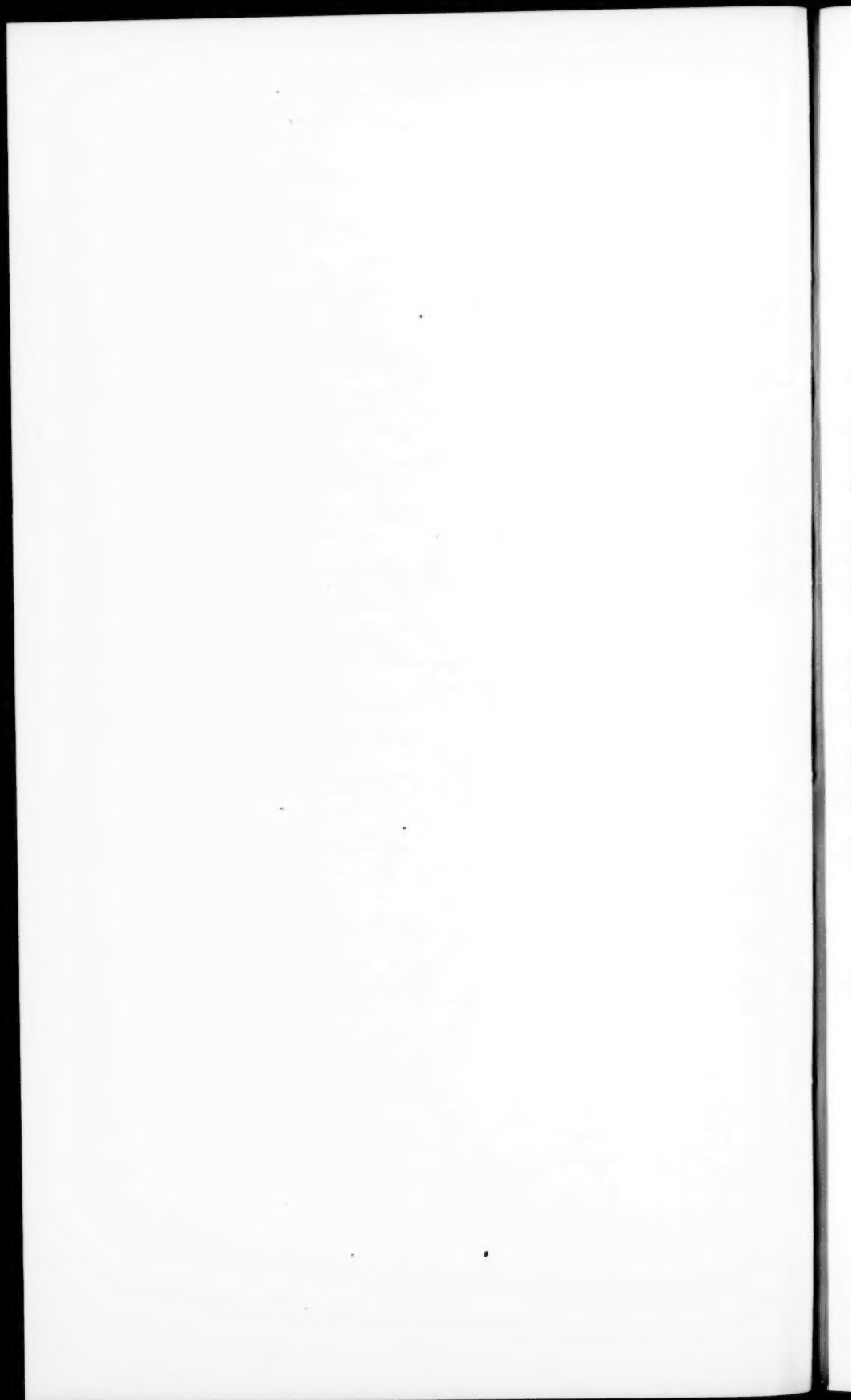
⁴ Murine.

YELLOW FEVER

[C—cases; D—deaths]

AFRICA						
Gold Coast.....	C	12		1	1	
Accra.....	D	1		1		
Sierra Leone.....	C	11	1			
Koinadugu District.....	C	11	1			
Freetown.....	C	11	1			
SOUTH AMERICA						
Brazil.....	D	400				
Goiáz State.....	D	10				
Goiânia.....	D	1				
Goiáz.....	D	3				
Niquelandia.....	D	3				
Porangatu.....	D	1				
Uruacu.....	D	2				
Matto Grosso State.....	D	1				
Colombia.....	D	12				
Boyaca Department.....	D	1				
Otanche.....	D	1				
Caqueta Commissary.....	D	1				
Montanita.....	D	1				
Meta Territory.....	C	1				
North Santander Department.....	D	4				
La Vega.....	D	3				
Rionegro.....	C	1				
Santander Department.....	D	5				
Campohermoso.....	D	1				
Guamales.....	D	1				
Maradales.....	D	1				
Tambo Redondo.....	D	1				
Veneoas.....	D	1				

¹ Includes suspected cases. ² Suspected. ³ The number of deaths from Dec. 1-Feb. 20, 1951, was estimated to be 400 and the number of cases was estimated to be 2,000. ⁴ Confirmed deaths.



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